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handelte und nicht bloß über die verschiedenen Namen eines und desselben Fisches, und deren Schreibung, über die verschiedenen Arten, deren Unterschiede und Aufenthaltsorte Aufschlüsse gab, sondern auch auf Vorschriften über Kochen und Braten derselben einging.

THE REAL UNICORN.

IN his review of Dr. Murray's recent work on museums, Mr. F. A. Bather¹ observes that the author refrains from any attempt to decide what the unicorn really was, notwithstanding that numerous endeavors have been made to identify fabulous creatures with modern quadrupeds. It would have been very agreeable had Mr. Bather chosen himself to enlighten us on this matter; since he does not, the following note is suggested.

What appears to have been the origin of the 'real unicorn,' that is to say, of the creature made known to the western world under that name by Ctesias, has been set forth in several interesting essays by German writers, amongst whom it will be sufficient to mention Schröder, Lüders, Lauchert and Goldstaub, the two last-named concerning themselves especially with the history of the 'Physiologus.'² Excellent reason is shown by these authors for freeing Ctesias of the charge of deliberate invention; he is believed to have recorded things pretty nearly as he saw them; no attempt is evident on his part to impose upon the credulity of others; although proved to be mistaken in some particulars, it is possible for us to discover the reason, the unicorn furnishing a case in point.

One can readily see that the description of the 'Monoceros' which we owe to Ctesias does not repose upon living specimens, any more than does that given by Herodotus of the Phœnix; what the former actually saw, and correctly depicts, are animal reliefs graven upon the walls of the Persian court at Persepolis, the like of which exist to this day. Among these representations the figure of the

unicorn is several times repeated, being, in fact, conventionalized profiles of an Asiatic ruminant new to the Greeks, with the two horns appearing in side-view as one. Excellent copies of these figures are to be found in standard works on ancient Persian and Assyrian art.

The post-classical history of the unicorn, together with the whole menagerie of folklore, has been a favorite study of French writers, the important works of Berger de Xivrey,³ le P. Cahier, Hippeau and others leaving little further to be desired in their line. In particular these authors have traced the extent to which popular natural history traditions became modified, early in the Christian era, through the influence of moral and religious interpretations. Thereafter, the stream of popular ideas relating to animals divides into two parallel branches, which remain for many centuries distinct: the one manifesting itself in the numerous versions of the Bestiary, the other in that purely fabulous natural history which gained wide circulation under the title of 'Wonders of India,' and whose source appears to have been a forgery of a letter from Alexander to Aristotle concerning the Indian conquest. Despite its unauthenticity, a prototype of the fraudulent document in question would seem to have been current as early as the Alexandrian period.

C. R. EASTMAN.

ROBERT BOWNE WARDER.

ROBERT BOWNE WARDER died at his home in Washington, July 23, 1905, after an illness extending over nearly a year.

Professor Warder was born in Cincinnati, O., March 28, 1848, and spent his early life in his country home at 'Aston,' North Bend, O. His character was formed under the influence of the Society of Friends, and this faith remained the dominant feature of his life. From childhood he showed the effect of his parents' training and example, in a broad and catholic view of the ethics of life, and in a love of truth and scientific investigation. This devotion to truth was an especial characteristic and governed his life and actions throughout.

³ Traditions Tératologiques (Paris, 1836).

¹ *Museumskunde*, Vol. I. (1905), p. 170.

² Lauchert, F., 'Geschichte des Physiologus' (Strasburg, 1889). Goldstaub, M., 'Der Physiologus und seine Weiterbildung.' *Philol.*, Supplement, Bd. VIII. (1901), pp. 337-404.

He was graduated from a Friends' institution, Earlham College, at Richmond, Ind., in 1866, and afterwards spent some time at the Illinois State University at Champaign, where he was instructor in chemistry and natural philosophy. This work of teaching seemed to show Professor Warder his natural bent, and his energy was thenceforth devoted to studying the broad principles underlying all natural science. He spent some years in traveling, chiefly in the western half of the United States, in connection with the different state geological surveys. In 1873 he went to Harvard, where he was graduated as B.S. in chemistry in 1874.

After graduating at Harvard he spent a year traveling in Germany, studying at Giesen under Heinrich Will, and at Berlin under Hofmann. His attention was, however, especially devoted to methods of teaching chemistry in the German universities, and the application of theoretical chemistry to the practical sciences. His chief aim was to fit himself in the broadest sense for his work of teaching. This was his main desire throughout life, to help others, and he never faltered. On returning to this country he was associated with Professor F. W. Clarke at the University of Cincinnati from 1875 to 1879 as professor of chemistry and physics. Professor Warder early saw the close relation between these then distinct branches of natural science, and his papers on 'The Speed of Saponification of Ethyl Acetate' and 'Evidence of Atomic Motion within Liquid Molecules' were pioneer investigations in the field of the physical chemistry of to-day.

He was engaged in this line of research from 1879 to 1883, when he accepted the chair of chemistry at Purdue University, where he remained until 1887. This position carried with it the duties of state chemist, work of a commercial character rather foreign to his natural tastes, but to which he gave the same painstaking devotion that characterized all his work. Even these routine analyses were made to pay tribute to physical chemistry, as is shown by papers on 'Influence of Time in Fertilizer Analysis,' 'Speed of Dissociation of Brass,' etc.

In 1884 he married Gulielma M. Dorland, who also belonged to the Society of Friends, and like himself was interested in evangelical work. Their life together was one of perfect harmony.

It was probably about this time that Professor Warder felt more keenly than ever the call to help others in another field than chemistry. His philanthropic and evangelical work had always been foremost in his mind and labors, and in 1887 he accepted the professorship of chemistry at Howard University in Washington. Here he labored until he died, teaching chemistry and physics, but above all setting an example and teaching the principles of a Christian life with an unselfish devotion.

In spite of lack of facilities, his work at this period on 'Dynamical Theory of Albumenoid Ammonia,' 'Recent Theories of Geometric Isomerism,' 'Cross Fertilization of the Sciences' and 'The Major Premise in Physical Chemistry' showed his natural inclination to this phase of chemistry.

Professor Warder's later papers were chiefly devoted to applying the laws of mass action to and showing the speed of chemical reactions for the analytical data obtained by other investigators.

He was essentially a critic and his devotion to truth caused him to scrutinize the investigations of others with the same zealous care with which he looked for flaws in his own work. This high standard, coupled with an unusual modesty, often caused a hesitation which sometimes obscured his really profound knowledge.

No one went to Professor Warder for a favor and was turned away empty-handed. What he had was given freely, and he seemed to feel that no labor was too great in his fundamental desire to help others.

At a meeting of the Washington Section of the American Chemical Society, held on November 9, 1905, the following resolutions were adopted:

WHEREAS, death has removed from earth our friend and co-worker, Robert Bowne Warder.

Resolved, That in his death chemistry has lost a disciple who gave to her service the enthusiasm

of his youth, the strength of his manhood and the counsel of his riper years.

The American Chemical Society has lost a member who through both his experimental researches and his theoretical studies and especially by his now classical work on reaction velocities has made unusual contributions to the advancement of the science for the promotion of which this society exists. These distinguished services have placed all who are interested in chemistry under lasting obligations, and his name will be honored so long as this science is cultivated.

The student of chemistry has lost a friend who was always ready to extend a helping hand and to contribute freely from his rare store of knowledge and extended experience.

The community has lost a man who by his civic virtues, his high ideals, his willingness to assume and faithfulness to perform duties of an unusually trying kind, his catholicity of views and of interests, and his tolerance of and kindly sympathy for the opinions of others commanded the respect and admiration of all with whom he came in contact.

His life was a benefaction, his presence a blessing, his practical christianity a continual source of edification and his career one of great usefulness to man.

We ask that this tribute to his memory be spread upon the minutes of the society; that it be printed in the proceedings and in *SCIENCE*, and that a copy be forwarded to Mrs. Warder.

On behalf of the society,

FRANK V. CAMERON,
F. W. CLARKE,
WM. H. SEAMAN,
FREDERIC P. DEWEY.

SCIENTIFIC NOTES AND NEWS.

THE German emperor has conferred on Professor Simon Newcomb the order 'pour le mérite' in science and the arts.

PROFESSOR EMIL FISCHER, of Berlin, has been elected president of the German Chemical Society.

THE Technical Institute at Munich has conferred the honorary degree of doctor of engineering on Dr. Felix Klein, professor of mathematics at Göttingen.

THE Geological Society of London has made the following awards: The Wollaston medal to Dr. Henry Woodward, formerly keeper of the geological department of the British Mu-

seum; the Murchison medal to Mr. C. T. Clough, of the Geological Survey, known for his excellent work in Scotland; the Lyell medal to Professor F. D. Adams, the Canadian geologist, whose petrographical work is well known; the Prestwich medal to Mr. William Whitaker, whose long labors on the Tertiary deposits of England render him a most fitting recipient. The funds are awarded as follows: The Wollaston to Dr. F. L. Kitchin, who, not long ago, was appointed paleontologist to the Geological Survey of Great Britain; the Murchison to Mr. Herbert Lapworth, who has followed in his father's footsteps with excellent work on the Welsh border; the Lyell is divided between Mr. W. G. Fearnside and Mr. R. H. Solly; the Barlow-Jameson goes to Mr. H. C. Beesley.

DR. A. B. RENDLE, who has been an assistant in the botanical department of the British Museum since 1888, has been appointed keeper of that department in succession to Mr. George Murray, recently retired.

PROFESSOR T. J. J. SEE, U. S. Navy, has recently been elected to membership in the Société française de Physique, Société astronomique de France, Circolo Matematico di Palermo, and to life membership in the Astronomical Society of the Pacific.

MR. G. W. ROLFE, instructor in sugar analysis in the Massachusetts Institute of Technology, has been given leave of absence for several months in order that he may go to Porto Rico to take charge of a sugar plantation on the Constanca estate.

PROFESSOR FRANCIS E. LLOYD, of the department of biology of Teachers College, Columbia University, has resigned to accept a position in connection with the Desert Laboratory of the Carnegie Institution.

IN accordance with the terms of the fund established anonymously, a course of eight lectures will be delivered by Harvard professors at Yale, following the first lecture under the fund delivered by President Eliot on November 13, on the subject, 'Resemblances and Differences among the American Universities,' and printed in this journal. The remainder of the series will be on philosophy.